2008

Forage Yields from 2007-2008 Small Grains

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THE SAMUEL ROBERTS NOBLE FOUNDATION

by J.A. Guretzky, M. Saha, J. Baker and S. Norton

NF-FO-08-02

Introduction

In an effort to assist producers in Oklahoma and Texas judge variety performance, the Noble Foundation has held trials to determine forage and grain yields of commercially available varieties and advanced experimental lines of small grains. The objective of this report is to summarize yields from the 2007-2008 trials.

Trial Procedures

The small grains tests were conducted at the Noble Foundation Dupy Farm near Gene Autry and the Red River Demonstration and Research Farm (RRF) near Burneyville, Okla. Soils were a Dale silt loam at Dupy and a Minco fine sandy loam at RRF. Ten sources contributed entries to the trial (Table 1).

The entries were seeded in a clean-tilled seedbed on Oct. 4, 2007, at Dupy and Oct. 2, 2007, at RRF. Each variety was sown at 2,000,000 pure live seed (PLS) per acre, which approximated 90 to 120 lb PLS/acre, depending on the crop and entry. Seeds were drilled in 7-inch rows at a 1-inch planting depth with a HEGE 500 drill. The entries were seeded in two adjacent 5- by 15-foot plots. The adjacent plots represented forage only use and dual purpose forage and grain use. Both plots were harvested at the same time for forage during the fall. Once first hollow stem stage of wheat was reached in the spring, the dual-purpose half was no longer harvested for forage to allow grain production. Plots harvested for forage only were harvested on Dec. 4, Feb. 12, March 14, April 1 and May 16 at Dupy and on Dec. 7, Feb. 18, March 18, April 11 and May 19 at RRF. Plots harvested for forage and grain were harvested for forage on Dec. 4 and Feb. 12 and for grain on June 17 at Dupy. At RRF, plots harvested for forage and grain were harvested for forage on Dec. 7 and Feb. 18 and for grain on June 23.

Fertilization at Dupy consisted of preplant incorporation of 80 lb N/acre on Sept. 11 and a topdress application of 80 lb N/acre on Feb. 12. At RRF, plots were topdressed with N at 80 lbs/ac on Feb. 18, 2007. An application of Amber at 0.56 ou/acre was applied on Oct. 5 at Dupy and RRF to control annual ryegrass.

The trials were randomized complete block designs with three replications. Entries were blocked by crop and randomized within each replication. Data were analyzed by crop with the general linear models procedure in SAS (Statistical Analysis Software, Cary, N.C.), and means were separated by the least significant difference (LSD) method.

Results and Discussion

Growing conditions were fair during the trial (Table 2). Temperatures were above and precipitation was below the long-term location average during autumn at Dupy and RRF. Precipitation increased and temperatures were nearer to the long-term location average in spring.

Forage Production

Total forage production and when the forage occurs seasonally during fall and spring are important traits of small grains in the southern Plains. Historically, rye has produced the most fall forage. Triticale is also a strong fall and early spring forage producer. Wheat matures later and produces the majority of its forage during spring. Oat is the latest maturing of the small grains, producing the majority of its forage from April to May.

On loam soil at Dupy, fall forage production was similar among entries of rye during the 2007-2008 trial (Table 3). Only Bates yielded significantly less forage on the first harvest date of Dec. 4. Fall forage production at Dupy was also strong among entries of wheat; differences among entries were generally not significant. Forage production from wheat and triticale mostly occurred during mid-spring this year. Top spring forage producing entries of wheat, as measured by forage yields exceeding 3500 lb/acre from harvests on March 14 and April 1, included Art, Coker 9553 (soft), Custer, Deliver, Duster, Endurance, NF96131, Overley, Ranger Brand (soft) and Sturdy 2K. Top spring forage producing entries of triticale at Dupy included TAMcale 5019, ThundercaleV, Thundercale, ThundercaleK and Thundertall. As measured by harvests on April 1 and May 16, late spring forage production was best from oat, with many of the experimental lines from Louisiana and Noble Foundation breeding programs outproducing the standard checks of Dallas and Harrison.

On sandy loam soil at RRF, fall and early spring forage production, for the most part, was similar among entries of rye (Table 4). Forage production on the fourth harvest date of April 11, however, was significantly greater for

Elbon, Maton and Oklon. Triticale and wheat produced most of their forage during early to mid-spring. Among entries of triticale, Noble Foundation experimental lines produced more forage earlier, but less forage later, than TAMcale 5019, ThundercaleV and Thundercale. Among entries of wheat, the best spring forage producing entries, as measured by cumulative forage yields exceeding 4000 lb/acre from harvests on Feb. 18, March 18 and April 11, included Doans, Endurance, Forage Maxx (soft), NF96131 and Tam 203. Entries of oat that produced the most late spring forage, as measured by harvests on April 11 and May 19, included Harrison, LA99017SBSBSB-275-C-B-S2, NF27, NF7 and NF95418.

Among top producing entries on loam soil at Dupy, total forage yield ranged from 5537 to 7348 lb/acre for oat, 7117 to 8125 lb/acre for rye, 5241 to 6185 lb/acre for triticale, and 5643 to 6955 lb/acre for wheat. On the sandy loam soil at RRF, total forage yield ranged from 5158 to 6274 lb/acre for oat, 5090 to 6768 lb/acre for rye, 3317 to 5126 lb/acre for triticale, and 4473 to 5206 lb/acre for wheat.

Grain Production

Grain yield among entries of oat was highly variable (Table 5). On loam soil at Dupy, top producing entries included FL99201, LA02048SBSBSB-S1, LA99017SBSBSB-275-C-B-S2, NF27A and Plot Spike LA9339. Test weights were significantly better for LA99017SBSBSB-275-C-B-S2 and Plot Spike LA9339. On sandy loam soil at RRF, grain yield was best for Dallas, FL99201, FL99212, LA99016SBSB-98-S, LA99017SBSBSB-275-C-B-S2, NF7, NF95401A and Plot Spike LA9339. Test weights were similar among varieties with the exception of Thunderleaf, which winter-killed.

Grain yield of rye varieties were similar among entries regardless of location. Test weights were best for Bates, Bates RS4, Elbon, NF95307A and NF97326 at Dupy. At RRF, test weights were similar among entries, with the exception of Thundergreen, whose test weight was 4 lb/bu lower than the other entries. Among entries of triticale, grain yields were significantly better for TAMcale 5019, ThundercaleV and Thundercale at RRF. Of these, TAMcale 5019 had the best test weight. On loam soil at Dupy, grain yield was greatest for TAMcale 5019 and ThundercaleV. Test weight was also highest for TAMcale 5019 at Dupy.

Grain yield of entries of wheat were best for Art, Duster, Endurance, NF95134A, OKO3305 and Tam 203 of the hard red types on loam soil at Dupy. Of these entries, Endurance and OKO3305 had the best test weight. Among soft red types, grain yield was best for 372, Coker 9553, Crawford and Ranger Brand. Coker 9553 had the best test weight of these entries. On the sandy loam at RRF, grain yield was reduced considerably. Among hard red types, 2174, APO4T8211 (Jackpot), Art, Custer, Deliver, Duster, Endurance, NF95134A and Tam 203 had the best yield. Similar to results at Dupy, grain yield of soft red types was best for 372, Coker 9553, Crawford and Ranger Brand. Test weights were similar among most entries of hard and soft red wheat at RRF.

Table 1. Contributors to the 2007-2008 small grains variety test at the Noble Foundation Dupy Farm, Gene Autry, Okla., and Red River Demonstration and Research Farm, Burneyville, Okla.

Code	Contributor
Andrews	Andrews Farm and Seed, Inc., Carthage, Mo.
AgriPro	AgriPro, Vernon, Texas
Ehmke	Vance Ehmke, Ehmke Seed Co., Healy, Kan.
FL	Ann Blount, North Florida Research and Education Center, University of Florida, Marianna, Fla.
LA	Steve Harrison, LSU Ag Center, Baton Rouge, La.
NF	Malay Saha, Forage Improvement Division, Noble Foundation, Ardmore, Okla.
OKFS	Oklahoma Foundation Seed Stocks, Inc., Stillwater, Okla.
OSU	Brett Carver, Plant and Soil Science Dept., Oklahoma State Univ., Stillwater, Okla.
MBS	MBS Seed, Ltd. Co., Denton, Texas
Turner	Turner Seed Company, Breckenridge, Texas

Table 2. Average 2007-2008 and 30-year (1971-2000) temperature (°F) and precipitation (inches) for the Noble Foundation Dupy Farm, Gene Autry, Okla., and Red River Demonstration and Research Farm (RRF), Burneyville, Okla.

			Temperature (°F)		Precipitation (inches)	
Location	Month	Year	2007-2008	1971-2000	2007-2008	1971-2000
Dupy	Sept.	2007	75.5	74.6	0.7	4.2
	Oct.	2007	66.1	63.9	2.1	4.2
	Nov.	2007	54.7	51.3	0.9	2.6
	Dec.	2007	42.4	42.2	1.8	2.3
	Jan.	2008	41.0	39.3	0.1	1.8
	Feb.	2008	45.9	44.9	1.6	2.1
	Mar.	2008	54.2	52.8	5.3	3.2
	Apr.	2008	61.3	61.8	2.7	3.2
	May	2008	70.7	70.7	4.5	5.1
	Jun.	2008	79.7	78.5	2.4	4.3
	Sept.-Jun.		59.2	58.0	22.1	33.0
RRF	Sept.	2007	75.7	74.7	0.9	4.0
	Oct.	2007	65.7	63.9	2.3	4.4
	Nov.	2007	55.2	51.5	1.0	2.7
	Dec.	2007	42.6	42.7	1.4	2.4
	Jan.	2008	40.7	39.9	0.1	1.7
	Feb.	2008	46.7	45.3	1.3	2.1
	Mar.	2008	55.3	52.9	5.6	3.4
	Apr.	2008	62.1	61.6	2.3	3.3
	May	2008	71.1	70.3	3.5	5.1
	Jun.	2008	81.0	78.1	2.4	4.2
	Sept.-Jun.		59.6	58.1	20.8	33.3

Table 3. Forage yield of small grains at the Noble Foundation Dupy Farm, Gene Autry, Okla.

Crop	Variety [Source]	Harvest dates 12/4	2/12	3/14	4/1	5/16	Sum
		lb/acre					
Oats	Dallas [MBS]	421	572	605	1907	2032	5537
	FL99201	420	656	764	1956	2081	5877
	FL99212	691	358	361	983	1615	4008
	Harrison [MBS]	562	616	903	1955	1519	5556
	LA02048SBSBSB-S1	191	921	519	2114	2551	6296
	LA99011SBSBSB-45-B-S-B-S2	1308	149	198	701	2444	4800
	LA99016SBSB-98-S	1007	584	390	2183	2884	7050
	LA99017SBSBSB-275-C-B-S2	216	628	1114	2616	2141	6716
	NF18	599	661	983	2072	819	5134
	NF27	1131	530	603	1946	2877	7088
	NF27A	1184	434	675	2127	2928	7348
	NF7	667	583	396	2144	2706	6496
	NF95401A	715	662	497	1561	3010	6445
	NF95418	664	522	751	2373	1778	6089
	Plot Spike LA9339	993	568	694	2448	2254	6957
	Thunderleaf [Ehmke]	2512	0	0	0	116	2627
	Mean	830	528	591	1818	2109	5876
	LSD	1051	353	412	590	961	1883
Rye	Bates [OKFS]	860	688	1813	1393	865	5621
	Bates 114A [NF]	1506	1044	2205	1347	1196	7298
	Bates RS4 [NF]	1418	1111	2528	1430	1300	7788
	Elbon [OKFS]	1470	509	2079	2402	656	7117
	Maton [OKFS]	1397	665	2764	1924	1096	7847
	Maton II [NF]	1273	1088	2574	1242	1414	7593
	NF95307A	1698	1007	2375	1388	1202	7671
	NF95307B	1768	852	2677	1087	1392	7778
	NF95319B	1479	1422	2400	1055	1642	7999
	NF96304A	1449	940	1958	1181	1163	6693
	NF97325	1693	1263	2717	1064	1342	8081
	NF97326	1773	1333	2300	1207	1562	8176
	Oklon [OKFS]	1445	960	2376	2246	1097	8125
	Thundergreen [Ehmke]	1383	155	1197	2586	1883	7203
	Mean	1472	932	2283	1540	1272	7499
	LSD	589	404	689	504	496	1589
Triticale	NF95215B	762	550	1448	1368	516	4644
	NF96210	658	554	1351	1896	335	4795
	NF96213	672	562	1506	1619	240	4600
	NF97201A	693	839	1435	1319	225	4511
	NF97210A	892	823	1567	1864	139	5287
	NF97226	844	791	1636	1730	358	5360
	TAMcale 5019 [AgriPro]	1055	447	1988	2218	414	6123
	ThundercaleV [Ehmke]	895	241	1393	2640	692	5862
	Thundercale [Ehmke]	1046	290	2125	2392	333	6185
	ThundercaleK [Ehmke]	1121	117	1207	2312	485	5241
	Thundertall [Ehmke]	953	0	623	2425	908	4900
	Mean	872	474	1480	1980	422	5228
	LSD	382	389	411	641	351	1190

Table 3. *(cont.)* Forage yield of small grains at the Noble Foundation Dupy Farm, Gene Autry, Okla.

Crop	Variety [Source]	Harvest dates					
		12/4	2/12	3/14	4/1	5/16	Sum
		lb/acre					
Wheat	2174 [OKFS]	1469	407	1003	1989	303	5173
	372 (soft) [MBS]	1430	946	1631	1438	1198	6645
	APO4T8211 (Jackpot) [AgriPro]	1731	447	1520	1884	345	5928
	APO6TA4520 [AgriPro]	1524	1215	1346	1209	347	5643
	Art [AgriPro]	1747	617	1250	2442	228	6284
	Coker 9553 (soft) [AgriPro]	1389	617	1766	1794	457	6023
	Crawford (soft) [AgriPro]	1529	899	1561	1256	411	5657
	Custer [OKFS]	1829	335	1435	2445	146	6191
	Deliver [OKFS]	1243	390	1361	2225	120	5339
	Doans [AgriPro]	1163	618	1535	1946	110	5373
	Duster [OKFS]	1316	430	1655	2425	98	5925
	Endurance [OKFS]	1469	338	1465	2614	131	6016
	Fannin [AgriPro]	1000	498	1655	1584	346	5082
	Forage Maxx (soft) [Andrews]	1690	974	1806	1689	96	6254
	Jagger [OKFS]	1465	635	1192	1491	221	5003
	Kingrazer (soft) [Andrews]	726	628	1302	1818	342	4817
	Longhorn [AgriPro]	1960	242	1513	1952	26	5693
	NF94120 (soft)	1809	1102	1713	1777	397	6800
	NF95134A	1468	517	1626	1371	738	5720
	NF96107A	1567	765	1558	1878	130	5898
	NF96131	1428	787	1778	1958	357	6308
	NF97109A	1047	702	1567	1072	359	4748
	NF97112	370	587	1377	1534	56	3923
	NF98120	1353	922	1617	724	760	5377
	OK Bullet [OKFS]	1462	343	1449	1764	299	5317
	OKO3305 [OSU]	1616	270	1142	2260	50	5337
	OKO3522 [OSU]	1422	568	1736	1669	49	5444
	Overley [OKFS]	1263	648	2033	1526	232	5702
	Ranger Brand (soft) [MBS]	1831	470	1605	2326	723	6955
	Sturdy 2K [Turner]	1870	416	1327	2306	112	6032
	Tam 203 [AgriPro]	1671	574	1684	1874	517	6320
	Tam 111 [AgriPro]	1793	583	1452	2026	87	5490
	TX03M1096 [AgriPro]	1195	1261	1853	962	536	5807
	Mean	1449	629	1531	1794	313	5717
	LSD	956	332	561	555	365	1471

Table 4. Forage yield of small grains at the Noble Foundation Red River Demonstration and Research Farm (RRF), Burneyville, Okla.

Crop	Variety [Source]	Harvest dates					
		12/7	2/18	3/18	4/11	5/19	Sum
		lb/acre					
Oats	Dallas [MBS]	235	488	551	1903	1331	4507
	FL99201	808	353	662	1955	1243	5021
	FL99212	519	302	404	1571	1392	4188
	Harrison [MBS]	248	341	684	2441	1444	5158
	LA02048SBSBSB-S1	143	284	491	1536	1338	3791
	LA99011SBSBSB-45-B-S-B-S2	720	66	93	623	1097	2598
	LA99016SBSB-98-S	330	405	393	1961	1902	4991
	LA99017SBSBSB-275-C-B-S2	106	674	1022	2476	1996	6274
	NF18	570	690	787	1810	669	4525
	NF27	562	355	333	2198	1876	5325
	NF27A	716	391	408	2162	1823	5500
	NF7	639	374	936	2440	1602	5992
	NF95401A	739	379	564	1721	1644	5047
	NF95418	251	338	688	2737	1460	5474
	Plot Spike LA9339	310	360	460	1622	1343	4094
	Thunderleaf [Ehmke]	1149	0	17	0	738	1904
	Mean	503	363	531	1822	1432	4649
	LSD	305	273	359	552	752	1121
Rye	Bates [OKFS]	1500	1030	1051	2528	658	6768
	Bates 114A [NF]	1300	906	895	2482	548	6130
	Bates RS4 [NF]	1201	844	564	2604	559	5772
	Elbon [OKFS]	1259	508	635	2897	459	5758
	Maton [OKFS]	1199	541	899	3544	462	6644
	Maton II [NF]	1115	901	579	2158	517	5270
	NF95307A	1373	1315	740	2070	440	5939
	NF95307B	1532	1058	773	2602	636	6601
	NF95319B	1378	1211	725	2192	669	6174
	NF96304A	1282	929	682	2186	652	5731
	NF97325	937	1026	960	1973	465	5361
	NF97326	1247	1185	767	1772	674	5646
	Oklon [OKFS]	1025	562	762	2916	565	5830
	Thundergreen [Ehmke]	834	535	472	1961	1288	5090
	Mean	1227	896	750	2420	614	5908
	LSD	394	482	416	721	396	1385
Triticale	NF95215B	1058	989	776	2126	177	5126
	NF96210	960	698	651	1960	96	4365
	NF96213	941	974	822	1821	298	4856
	NF97201A	763	1092	621	1780	156	4413
	NF97210A	823	975	570	2074	33	4474
	NF97226	591	1079	911	2079	102	4761
	TAMcale 5019 [AgriPro]	369	1182	706	1675	363	4295
	ThundercaleV [Ehmke]	608	720	1017	2283	375	5003
	Thundercale [Ehmke]	393	660	917	2576	367	4913
	ThundercaleK [Ehmke]	615	473	565	2437	124	4215
	Thundertall [Ehmke]	678	12	276	1947	403	3317
	Mean	709	805	712	2069	227	4521
	LSD	354	390	430	607	198	1383

Table 4. *(cont.)* Forage yield of small grains at the Noble Foundation Red River Demonstration and Research Farm (RRF), Burneyville, Okla.

Crop	Variety [Source]	Harvest dates					
		12/7	2/18	3/18	4/11	5/19	Sum
		lb/acre					
Wheat	2174 [OKFS]	368	540	672	2646	123	4349
	372 (soft) [MBS]	308	1083	686	2003	1125	5205
	APO4T8211 (Jackpot)	604	589	775	2259	180	4407
	APO6TA4520 [AgriPro]	607	1204	623	1423	193	4051
	Art [AgriPro]	370	732	675	1945	172	3894
	Coker 9553 (soft) [AgriPro]	415	695	788	2364	290	4552
	Crawford (soft) [AgriPro]	318	761	836	2046	129	4090
	Custer [OKFS]	287	481	760	2668	6	4202
	Deliver [OKFS]	484	528	662	2347	143	4164
	Doans [AgriPro]	718	662	899	2539	230	5047
	Duster [OKFS]	280	474	835	2432	363	4383
	Endurance [OKFS]	298	445	920	3096	89	4848
	Fannin [AgriPro]	648	1095	817	1933	221	4714
	Forage Maxx (soft) [Andrews]	548	745	701	2708	255	4956
	Jagger [OKFS]	144	394	642	2347	303	3830
	Kingrazer (soft) [Andrews]	348	821	871	2167	58	4264
	Longhorn [AgriPro]	445	673	760	2267	55	4200
	NF94120 (soft)	628	934	791	2127	483	4963
	NF95134A	675	835	729	2411	557	5206
	NF96107A	567	763	814	2278	97	4519
	NF96131	294	557	881	2722	285	4740
	NF97109A	663	1166	566	1897	402	4693
	NF97112	520	861	901	1853	316	4451
	NF98120	511	1099	670	1834	634	4749
	OK Bullet [OKFS]	496	540	659	1985	103	3782
	OKO3305 [OSU]	554	423	650	2164	200	3991
	OKO3522 [OSU]	371	723	957	1790	57	3898
	Overley [OKFS]	448	600	619	1666	112	3445
	Ranger Brand (soft) [MBS]	270	474	714	2207	455	4121
	Sturdy 2K [Turner]	283	712	859	2198	283	4335
	Tam 203 [AgriPro]	122	433	706	3003	209	4473
	Tam 111 [AgriPro]	301	446	904	2534	293	4477
	TX03M1096 [AgriPro]	570	1022	567	1633	531	4322
	Mean	438	712	755	2227	271	4404
	LSD	353	322	294	600	315	769

Table 5. Grain yield of small grains at the Noble Foundation Dupy Farm, Gene Autry, Okla., and Red River Demonstration and Research Farm (RRF), Burneyville, Okla.

		Dupy		RRF	
Crop	Variety [Source]	Yield	Test weight	Yield	Test weight
		bu/acre	lb/bu	bu/acre	lb/bu
Oats	Dallas [MBS]	32.5	33.1	39.8	35.2
	FL99201	45.4	31.5	46.6	33.4
	FL99212	28.1	32.4	38.7	35.8
	Harrison [MBS]	27.4	33.6	27.8	34.6
	LA02048SBSBSB-S1	50.9	31.0	25.2	33.4
	LA99011SBSBSB-45-B-S-B-S2	31.4	32.0	33.8	35.1
	LA99016SBSB-98-S	31.7	31.5	44.7	33.5
	LA99017SBSBSB-275-C-B-S2	57.6	32.5	51.1	34.9
	NF18	32.3	32.4	35.3	32.3
	NF27	20.7	30.1	23.7	33.2
	NF27A	38.4	30.9	30.7	33.6
	NF7	27.7	30.2	37.6	33.5
	NF95401A	15.0	31.9	39.7	32.8
	NF95418	29.2	32.6	31.3	36.3
	Plot Spike LA9339	50.2	33.2	38.6	38.1
	Thunderleaf [Ehmke]	0.0	0.0	5.2	12.9
	Mean	32.5	32.0	34.3	33.1
	LSD	24.7	2.0	15.7	9.9
Rye	Bates [OKFS]	54.7	55.1	38.1	55.6
	Bates 114A [NF]	55.7	54.7	36.7	55.8
	Bates RS4 [NF]	57.6	55.3	31.0	55.9
	Elbon [OKFS]	57.1	55.6	31.4	55.9
	Maton [OKFS]	56.3	54.9	30.2	55.3
	Maton II [NF]	60.0	54.7	27.5	55.5
	NF95307A	61.6	55.2	31.4	55.6
	NF95307B	57.4	54.1	37.8	55.2
	NF95319B	57.6	54.3	33.9	55.6
	NF96304A	55.3	54.8	27.9	55.3
	NF97325	60.9	54.1	26.8	55.1
	NF97326	60.6	55.0	28.9	55.5
	Oklon [OKFS]	57.4	54.6	35.2	55.6
	Thundergreen [Ehmke]	61.1	50.1	33.4	51.4
	Mean	58.1	54.5	32.1	55.3
	LSD	12.4	0.7	9.2	4.4
Triticale	NF95215B	33.8	49.2	24.3	50.7
	NF96210	35.8	50.4	20.1	51.2
	NF96213	40.3	51.7	23.9	52.2
	NF97201A	40.9	49.3	26.3	51.1
	NF97210A	35.6	47.2	17.2	48.8
	NF97226	34.9	49.9	18.1	52.2
	TAMcale 5019 [AgriPro]	47.8	51.9	32.0	51.8
	ThundercaleV [Ehmke]	57.2	49.5	33.0	49.5
	Thundercale [Ehmke]	40.1	49.4	32.5	50.0
	ThundercaleK [Ehmke]	28.2	47.4	16.3	48.6
	Thundertall [Ehmke]	12.7	47.5	.	.
	Mean	38.2	49.5	22.6	47.3
	LSD	11.9	1.5	6.6	1.5

Table 5. *(cont.)* Grain yield of small grains at the Noble Foundation Dupy Farm, Gene Autry, Okla., and Red River Demonstration and Research Farm (RRF), Burneyville, Okla.

		Dupy		RRF	
Crop	Variety [Source]	Yield	Test weight	Yield	Test weight
Wheat	2174 [OKFS]	53.6	60.9	37.2	61.2
	372 (soft) [MBS]	66.3	58.6	44.0	58.6
	APO4T8211 (Jackpot) [AgriPro]	60.6	60.2	41.4	60.5
	APO6TA4520 [AgriPro]	50.2	60.7	22.0	59.2
	Art [AgriPro]	58.9	60.1	38.9	60.9
	Coker 9553 (soft) [AgriPro]	65.9	60.8	38.0	60.7
	Crawford (soft) [AgriPro]	63.3	58.8	37.0	58.7
	Custer [OKFS]	49.2	60.1	36.8	60.2
	Deliver [OKFS]	50.7	61.2	37.4	61.9
	Doans [AgriPro]	37.5	60.1	32.9	61.5
	Duster [OKFS]	62.0	60.7	36.5	61.4
	Endurance [OKFS]	69.8	61.1	38.1	60.8
	Fannin [AgriPro]	56.5	62.2	33.7	62.0
	Forage Maxx (soft) [Andrews]	52.4	60.8	19.4	39.9
	Jagger [OKFS]	45.8	60.2	27.0	58.9
	Kingrazer (soft) [Andrews]	52.9	60.7	28.2	59.5
	Longhorn [AgriPro]	48.6	59.4	28.2	60.9
	NF94120 (soft)	43.1	58.8	23.2	60.3
	NF95134A	64.0	59.7	39.7	60.0
	NF96107A	48.1	60.0	28.4	61.2
	NF96131	50.6	58.2	34.3	59.1
	NF97109A	48.9	60.5	29.4	60.1
	NF97112	47.1	59.9	34.5	61.0
	NF98120	38.0	58.4	25.4	58.1
	OK Bullet [OKFS]	48.6	61.4	31.3	61.6
	OKO3305 [OSU]	51.7	61.9	27.0	62.4
	OKO3522 [OSU]	61.2	62.0	32.1	62.4
	Overley [OKFS]	47.7	60.3	19.1	60.5
	Ranger Brand (soft) [MBS]	59.6	59.4	36.3	59.7
	Sturdy 2K [Turner]	54.0	60.0	34.1	59.4
	Tam 203 [AgriPro]	61.2	58.2	38.6	58.4
	Tam 111 [AgriPro]	43.9	61.3	34.3	61.8
	TX03M1096 [AgriPro]	56.9	58.9	29.2	58.8
	Mean	53.8	60.2	32.8	59.8
	LSD	12.8	0.8	9.2	22.5

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